

Coding Challenges: CareerHub, The Job Board

- ELAKKIYA M

1. Provide a SQL script that initializes the database for the Job Board scenario “CareerHub”

```
mysql> CREATE DATABASE CAREERHUB;  
Query OK, 1 row affected (0.01 sec)  
  
mysql> USE CAREERHUB;  
Database changed  
mysql>
```

2. Create tables for Companies, Jobs, Applicants and Applications ,
3. Define appropriate primary keys, foreign keys, and constraints.

The answer for query 2 and 3 are executed together:

```
mysql> CREATE TABLE COMPANIES (  
-> COMPANYID INT PRIMARY KEY,  
-> COMPANYNAME VARCHAR(255),  
-> LOCATION VARCHAR(255)  
-> );  
Query OK, 0 rows affected (0.06 sec)  
  
mysql> DESC COMPANIES;  
+-----+-----+-----+-----+-----+-----+  
| Field          | Type          | Null | Key | Default | Extra |  
+-----+-----+-----+-----+-----+-----+  
| COMPANYID      | int           | NO   | PRI | NULL    |       |  
| COMPANYNAME    | varchar(255)  | YES  |     | NULL    |       |  
| LOCATION       | varchar(255)  | YES  |     | NULL    |       |  
+-----+-----+-----+-----+-----+-----+  
3 rows in set (0.02 sec)  
  
mysql> CREATE TABLE JOBS (  
-> JOBID INT PRIMARY KEY,  
-> COMPANYID INT,  
-> JOBTITLE VARCHAR(255),  
-> JOBDESCRIPTION TEXT,  
-> JOBLLOCATION VARCHAR(255),  
-> SALARY DECIMAL(10, 2),  
-> JOBTTYPE VARCHAR(50),  
-> POSTEDDATE DATETIME,  
-> FOREIGN KEY (COMPANYID) REFERENCES COMPANIES(COMPANYID)  
-> );  
Query OK, 0 rows affected (0.10 sec)  
  
mysql> DESC JOBS;  
+-----+-----+-----+-----+-----+-----+  
| Field          | Type          | Null | Key | Default | Extra |  
+-----+-----+-----+-----+-----+-----+  
| JOBID          | int           | NO   | PRI | NULL    |       |  
| COMPANYID      | int           | YES  | MUL | NULL    |       |  
| JOBTITLE       | varchar(255)  | YES  |     | NULL    |       |  
| JOBDESCRIPTION | text          | YES  |     | NULL    |       |  
| JOBLLOCATION    | varchar(255)  | YES  |     | NULL    |       |  
| SALARY         | decimal(10,2) | YES  |     | NULL    |       |  
| JOBTTYPE       | varchar(50)   | YES  |     | NULL    |       |  
| POSTEDDATE     | datetime      | YES  |     | NULL    |       |  
+-----+-----+-----+-----+-----+-----+  
8 rows in set (0.00 sec)
```

```
mysql> CREATE TABLE APPLICANTS (
  -> APPLICANTID INT PRIMARY KEY,
  -> FIRSTNAME VARCHAR(100),
  -> LASTNAME VARCHAR(100),
  -> EMAIL VARCHAR(255),
  -> PHONE VARCHAR(20),
  -> RESUME TEXT
  -> );
Query OK, 0 rows affected (0.07 sec)

mysql> DESC APPLICANTS;
+-----+-----+-----+-----+-----+-----+
| Field | Type | Null | Key | Default | Extra |
+-----+-----+-----+-----+-----+-----+
| APPLICANTID | int | NO | PRI | NULL | |
| FIRSTNAME | varchar(100) | YES | | NULL | |
| LASTNAME | varchar(100) | YES | | NULL | |
| EMAIL | varchar(255) | YES | | NULL | |
| PHONE | varchar(20) | YES | | NULL | |
| RESUME | text | YES | | NULL | |
+-----+-----+-----+-----+-----+-----+
6 rows in set (0.00 sec)

mysql> CREATE TABLE APPLICATIONS (
  -> APPLICATIONID INT PRIMARY KEY,
  -> JOBID INT,
  -> APPLICANTID INT,
  -> APPLICATIONDATE DATETIME,
  -> COVERLETTER TEXT,
  -> FOREIGN KEY (JOBID) REFERENCES JOBS(JOBID),
  -> FOREIGN KEY (APPLICANTID) REFERENCES APPLICANTS(APPLICANTID)
  -> );
Query OK, 0 rows affected (0.10 sec)

mysql> DESC APPLICATIONS;
+-----+-----+-----+-----+-----+-----+
| Field | Type | Null | Key | Default | Extra |
+-----+-----+-----+-----+-----+-----+
| APPLICATIONID | int | NO | PRI | NULL | |
| JOBID | int | YES | MUL | NULL | |
| APPLICANTID | int | YES | MUL | NULL | |
| APPLICATIONDATE | datetime | YES | | NULL | |
| COVERLETTER | text | YES | | NULL | |
+-----+-----+-----+-----+-----+-----+
5 rows in set (0.00 sec)
```

INSERTING DATAS:

```
mysql> INSERT INTO COMPANIES (COMPANYID, COMPANYNAME, LOCATION) VALUES
  -> (1, 'INFOTECH SOLUTIONS', 'BANGALORE'),
  -> (2, 'TATA CONSULTANCY SERVICES', 'MUMBAI'),
  -> (3, 'WIPRO TECHNOLOGIES', 'HYDERABAD'),
  -> (4, 'HCL TECHNOLOGIES', 'CHENNAI'),
  -> (5, 'TECH MAHINDRA', 'PUNE');
Query OK, 5 rows affected (0.02 sec)
Records: 5 Duplicates: 0 Warnings: 0

mysql> SELECT * FROM COMPANIES;
ERROR 1146 (42S02): Table 'careerhub.companies' doesn't exist
mysql> SELECT * FROM COMPANIES;
+-----+-----+-----+
| COMPANYID | COMPANYNAME | LOCATION |
+-----+-----+-----+
| 1 | INFOTECH SOLUTIONS | BANGALORE |
| 2 | TATA CONSULTANCY SERVICES | MUMBAI |
| 3 | WIPRO TECHNOLOGIES | HYDERABAD |
| 4 | HCL TECHNOLOGIES | CHENNAI |
| 5 | TECH MAHINDRA | PUNE |
+-----+-----+-----+
5 rows in set (0.00 sec)

mysql> INSERT INTO JOBS (JOBID, COMPANYID, JOBTITLE, JOBDESCRIPTION, JOBLOCATION, SALARY, JOBTTYPE, POSTEDDATE) VALUES
  -> (101, 1, 'SOFTWARE ENGINEER', 'DEVELOP AND MAINTAIN APPLICATIONS', 'BANGALORE', 600000.00, 'FULL-TIME', '2025-06-01 10:00:00'),
  -> (102, 2, 'DATA ANALYST', 'ANALYZE COMPANY DATA FOR INSIGHTS', 'MUMBAI', 550000.00, 'FULL-TIME', '2025-06-02 09:30:00'),
  -> (103, 3, 'SYSTEM ADMINISTRATOR', 'MANAGE NETWORK SYSTEMS', 'HYDERABAD', 500000.00, 'FULL-TIME', '2025-06-03 11:00:00'),
  -> (104, 4, 'HR EXECUTIVE', 'HANDLE RECRUITMENT AND POLICIES', 'CHENNAI', 400000.00, 'PART-TIME', '2025-06-04 12:00:00'),
  -> (105, 5, 'FRONTEND DEVELOPER', 'DESIGN AND DEVELOP UI COMPONENTS', 'PUNE', 580000.00, 'CONTRACT', '2025-06-05 14:00:00');
Query OK, 5 rows affected (0.02 sec)
Records: 5 Duplicates: 0 Warnings: 0

mysql> SELECT * FROM JOBS;
+-----+-----+-----+-----+-----+-----+-----+
| JOBID | COMPANYID | JOBTITLE | JOBDESCRIPTION | JOBLOCATION | SALARY | JOBTTYPE | POSTEDDATE |
+-----+-----+-----+-----+-----+-----+-----+
| 101 | 1 | SOFTWARE ENGINEER | DEVELOP AND MAINTAIN APPLICATIONS | BANGALORE | 600000.00 | FULL-TIME | 2025-06-01 10:00:00 |
| 102 | 2 | DATA ANALYST | ANALYZE COMPANY DATA FOR INSIGHTS | MUMBAI | 550000.00 | FULL-TIME | 2025-06-02 09:30:00 |
| 103 | 3 | SYSTEM ADMINISTRATOR | MANAGE NETWORK SYSTEMS | HYDERABAD | 500000.00 | FULL-TIME | 2025-06-03 11:00:00 |
| 104 | 4 | HR EXECUTIVE | HANDLE RECRUITMENT AND POLICIES | CHENNAI | 400000.00 | PART-TIME | 2025-06-04 12:00:00 |
| 105 | 5 | FRONTEND DEVELOPER | DESIGN AND DEVELOP UI COMPONENTS | PUNE | 580000.00 | CONTRACT | 2025-06-05 14:00:00 |
+-----+-----+-----+-----+-----+-----+-----+
5 rows in set (0.00 sec)
```

```
mysql> INSERT INTO APPLICANTS (APPLICANTID, FIRSTNAME, LASTNAME, EMAIL, PHONE, RESUME) VALUES
-> (201, 'RAHUL', 'SHARMA', 'RAHUL.SHARMA@MAIL.COM', '9876543210', 'EXPERIENCED JAVA DEVELOPER.'),
-> (202, 'PRIYA', 'KAPOOR', 'PRIYA.KAPOOR@MAIL.COM', '9123456780', 'SKILLED DATA ANALYST WITH 3 YEARS EXPERIENCE.'),
-> (203, 'VIKRAM', 'SINGH', 'VIKRAM.SINGH@MAIL.COM', '9988776655', 'SYSTEM ADMIN WITH EXPERTISE IN LINUX SERVERS.'),
-> (204, 'ANITA', 'MENON', 'ANITA.MENON@MAIL.COM', '9090909090', 'HR PROFESSIONAL WITH 5 YEARS EXPERIENCE.'),
-> (205, 'ARJUN', 'VERMA', 'ARJUN.VERMA@MAIL.COM', '9001234567', 'UI/UX DEVELOPER WITH STRONG REACT SKILLS.');
```

Query OK, 5 rows affected (0.01 sec)
Records: 5 Duplicates: 0 Warnings: 0

```
mysql> SELECT * FROM APPLICANTS;
```

APPLICANTID	FIRSTNAME	LASTNAME	EMAIL	PHONE	RESUME
201	RAHUL	SHARMA	RAHUL.SHARMA@MAIL.COM	9876543210	EXPERIENCED JAVA DEVELOPER.
202	PRIYA	KAPOOR	PRIYA.KAPOOR@MAIL.COM	9123456780	SKILLED DATA ANALYST WITH 3 YEARS EXPERIENCE.
203	VIKRAM	SINGH	VIKRAM.SINGH@MAIL.COM	9988776655	SYSTEM ADMIN WITH EXPERTISE IN LINUX SERVERS.
204	ANITA	MENON	ANITA.MENON@MAIL.COM	9090909090	HR PROFESSIONAL WITH 5 YEARS EXPERIENCE.
205	ARJUN	VERMA	ARJUN.VERMA@MAIL.COM	9001234567	UI/UX DEVELOPER WITH STRONG REACT SKILLS.

5 rows in set (0.00 sec)

```
mysql> INSERT INTO APPLICATIONS (APPLICATIONID, JOBID, APPLICANTID, APPLICATIONDATE, COVERLETTER) VALUES
-> (301, 101, 201, '2025-06-06 10:30:00', 'I AM INTERESTED IN THE SOFTWARE ENGINEER ROLE.'),
-> (302, 102, 202, '2025-06-06 11:00:00', 'LOOKING FORWARD TO JOINING AS A DATA ANALYST.'),
-> (303, 103, 203, '2025-06-06 11:30:00', 'PLEASE CONSIDER MY APPLICATION FOR SYSTEM ADMINISTRATOR.'),
-> (304, 104, 204, '2025-06-06 12:00:00', 'INTERESTED IN HR ROLE, ATTACHED IS MY EXPERIENCE.'),
-> (305, 105, 205, '2025-06-06 12:30:00', 'EAGER TO CONTRIBUTE AS A FRONTEND DEVELOPER.');
```

Query OK, 5 rows affected (0.01 sec)
Records: 5 Duplicates: 0 Warnings: 0

```
mysql> SELECT * FROM APPLICATIONS;
```

APPLICATIONID	JOBID	APPLICANTID	APPLICATIONDATE	COVERLETTER
301	101	201	2025-06-06 10:30:00	I AM INTERESTED IN THE SOFTWARE ENGINEER ROLE.
302	102	202	2025-06-06 11:00:00	LOOKING FORWARD TO JOINING AS A DATA ANALYST.
303	103	203	2025-06-06 11:30:00	PLEASE CONSIDER MY APPLICATION FOR SYSTEM ADMINISTRATOR.
304	104	204	2025-06-06 12:00:00	INTERESTED IN HR ROLE, ATTACHED IS MY EXPERIENCE.
305	105	205	2025-06-06 12:30:00	EAGER TO CONTRIBUTE AS A FRONTEND DEVELOPER.

5 rows in set (0.00 sec)

- Ensure the script handles potential errors, such as if the database or tables already exist.

```
mysql> DROP TABLE IF EXISTS APPLICATIONS;
Query OK, 0 rows affected (0.06 sec)

mysql> DROP TABLE IF EXISTS JOBS;
Query OK, 0 rows affected (0.05 sec)

mysql> DROP TABLE IF EXISTS APPLICANTS;
Query OK, 0 rows affected (0.04 sec)

mysql> DROP TABLE IF EXISTS COMPANIES;
Query OK, 0 rows affected (0.04 sec)

mysql> SHOW TABLES;
Empty set (0.00 sec)
```

- Write an SQL query to count the number of applications received for each job listing in the "Jobs" table. Display the job title and the corresponding application count. Ensure that it lists all jobs, even if they have no applications.

```
mysql> SELECT J.JOBTITLE, COUNT(A.APPLICATIONID) AS APPLICATION_COUNT FROM JOBS J
-> LEFT JOIN APPLICATIONS A ON J.JOBID = A.JOBID
-> GROUP BY J.JOBTITLE;
```

JOBTITLE	APPLICATION_COUNT
SOFTWARE ENGINEER	1
DATA ANALYST	1
SYSTEM ADMINISTRATOR	1
HR EXECUTIVE	1
FRONTEND DEVELOPER	1

5 rows in set (0.01 sec)

6. Develop an SQL query that retrieves job listings from the "Jobs" table within a specified salary range. Allow parameters for the minimum and maximum salary values. Display the job title, company name, location, and salary for each matching job.

```
mysql> SELECT J.JOBTITLE, C.COMPANYNAME, J.JOBLOCATION, J.SALARY FROM JOBS J
-> JOIN COMPANIES C ON J.COMPANYID = C.COMPANYID
-> WHERE J.SALARY BETWEEN 500000 AND 600000;
```

JOBTITLE	COMPANYNAME	JOBLOCATION	SALARY
SOFTWARE ENGINEER	INFOTECH SOLUTIONS	BANGALORE	600000.00
DATA ANALYST	TATA CONSULTANCY SERVICES	MUMBAI	550000.00
SYSTEM ADMINISTRATOR	WIPRO TECHNOLOGIES	HYDERABAD	500000.00
FRONTEND DEVELOPER	TECH MAHINDRA	PUNE	580000.00

4 rows in set (0.00 sec)

7. Write an SQL query that retrieves the job application history for a specific applicant. Allow a parameter for the ApplicantID, and return a result set with the job titles, company names, and application dates for all the jobs the applicant has applied to.

```
mysql> SELECT J.JOBTITLE, C.COMPANYNAME, A.APPLICATIONDATE FROM APPLICATIONS A
-> JOIN JOBS J ON A.JOBID = J.JOBID
-> JOIN COMPANIES C ON J.COMPANYID = C.COMPANYID
-> WHERE A.APPLICANTID = 202;
```

JOBTITLE	COMPANYNAME	APPLICATIONDATE
DATA ANALYST	TATA CONSULTANCY SERVICES	2025-06-06 11:00:00

1 row in set (0.00 sec)

8. Create an SQL query that calculates and displays the average salary offered by all companies for job listings in the "Jobs" table. Ensure that the query filters out jobs with a salary of zero.

```
mysql> SELECT ROUND(AVG(SALARY)) AS AVERAGE_SALARY FROM JOBS WHERE SALARY > 0;
```

AVERAGE_SALARY
526000

1 row in set (0.00 sec)

9. Write an SQL query to identify the company that has posted the most job listings. Display the company name along with the count of job listings they have posted. Handle ties if multiple companies have the same maximum count.

```
mysql> SELECT C.COMPANYNAME, COUNT(J.JOBID) AS JOB_COUNT FROM COMPANIES C
-> LEFT JOIN JOBS J ON C.COMPANYID = J.COMPANYID
-> GROUP BY C.COMPANYNAME;
```

COMPANYNAME	JOB_COUNT
INFOTECH SOLUTIONS	1
TATA CONSULTANCY SERVICES	1
WIPRO TECHNOLOGIES	1
HCL TECHNOLOGIES	1
TECH MAHINDRA	1

5 rows in set (0.00 sec)

10. Find the applicants who have applied for positions in companies located in 'CityX' and have at least 3 years of experience.

```
mysql> SELECT DISTINCT A.FIRSTNAME, A.LASTNAME, A.EMAIL FROM APPLICATIONS AP
-> JOIN APPLICANTS A ON AP.APPLICANTID = A.APPLICANTID
-> JOIN JOBS J ON AP.JOBID = J.JOBID
-> JOIN COMPANIES C ON J.COMPANYID = C.COMPANYID
-> WHERE C.LOCATION = 'MUMBAI'
-> AND A.RESUME LIKE '%3 YEARS%';
```

FIRSTNAME	LASTNAME	EMAIL
PRIYA	KAPOOR	PRIYA.KAPOOR@MAIL.COM

1 row in set (0.00 sec)

11. Retrieve a list of distinct job titles with salaries between 500000 and 600000.

```
mysql> SELECT DISTINCT JOBTITLE FROM JOBS
-> WHERE SALARY BETWEEN 500000 AND 600000;
+-----+
| JOBTITLE |
+-----+
| SOFTWARE ENGINEER |
| DATA ANALYST |
| SYSTEM ADMINISTRATOR |
| FRONTEND DEVELOPER |
+-----+
4 rows in set (0.00 sec)
```

12. Find the jobs that have not received any applications.

```
mysql> SELECT JOBTITLE FROM JOBS
-> WHERE JOBID NOT IN (SELECT JOBID FROM APPLICATIONS);
Empty set (0.00 sec)
```

13. Retrieve a list of job applicants along with the companies they have applied to and the positions they have applied for.

```
mysql> SELECT A.FIRSTNAME, A.LASTNAME, C.COMPANYNAME, J.JOBTITLE FROM APPLICATIONS AP
-> JOIN APPLICANTS A ON AP.APPLICANTID = A.APPLICANTID
-> JOIN JOBS J ON AP.JOBID = J.JOBID
-> JOIN COMPANIES C ON J.COMPANYID = C.COMPANYID;
+-----+-----+-----+-----+
| FIRSTNAME | LASTNAME | COMPANYNAME | JOBTITLE |
+-----+-----+-----+-----+
| RAHUL | SHARMA | INFOTECH SOLUTIONS | SOFTWARE ENGINEER |
| PRIYA | KAPOOR | TATA CONSULTANCY SERVICES | DATA ANALYST |
| VIKRAM | SINGH | WIPRO TECHNOLOGIES | SYSTEM ADMINISTRATOR |
| ANITA | MENON | HCL TECHNOLOGIES | HR EXECUTIVE |
| ARJUN | VERMA | TECH MAHINDRA | FRONTEND DEVELOPER |
+-----+-----+-----+-----+
5 rows in set (0.00 sec)
```

14. Retrieve a list of companies along with the count of jobs they have posted, even if they have not received any applications.

```
mysql> SELECT C.COMPANYNAME, COUNT(J.JOBID) AS JOB_COUNT FROM COMPANIES C
-> LEFT JOIN JOBS J ON C.COMPANYID = J.COMPANYID
-> GROUP BY C.COMPANYNAME;
+-----+-----+
| COMPANYNAME | JOB_COUNT |
+-----+-----+
| INFOTECH SOLUTIONS | 1 |
| TATA CONSULTANCY SERVICES | 1 |
| WIPRO TECHNOLOGIES | 1 |
| HCL TECHNOLOGIES | 1 |
| TECH MAHINDRA | 1 |
+-----+-----+
5 rows in set (0.00 sec)
```

15. List all applicants along with the companies and positions they have applied for, including those who have not applied.

```
mysql> SELECT A.FIRSTNAME, A.LASTNAME, C.COMPANYNAME, J.JOBTITLE FROM APPLICANTS A
-> LEFT JOIN APPLICATIONS AP ON A.APPLICANTID = AP.APPLICANTID
-> LEFT JOIN JOBS J ON AP.JOBID = J.JOBID
-> LEFT JOIN COMPANIES C ON J.COMPANYID = C.COMPANYID;
+-----+-----+-----+-----+
| FIRSTNAME | LASTNAME | COMPANYNAME | JOBTITLE |
+-----+-----+-----+-----+
| RAHUL | SHARMA | INFOTECH SOLUTIONS | SOFTWARE ENGINEER |
| PRIYA | KAPOOR | TATA CONSULTANCY SERVICES | DATA ANALYST |
| VIKRAM | SINGH | WIPRO TECHNOLOGIES | SYSTEM ADMINISTRATOR |
| ANITA | MENON | HCL TECHNOLOGIES | HR EXECUTIVE |
| ARJUN | VERMA | TECH MAHINDRA | FRONTEND DEVELOPER |
+-----+-----+-----+-----+
5 rows in set (0.00 sec)
```

16. Find companies that have posted jobs with a salary higher than the average salary of all jobs.

```
mysql> SELECT DISTINCT C.COMPANYNAME FROM COMPANIES C
-> JOIN JOBS J ON C.COMPANYID = J.COMPANYID
-> WHERE J.SALARY > (SELECT AVG(SALARY) FROM JOBS);
+-----+
| COMPANYNAME |
+-----+
| INFOTECH SOLUTIONS |
| TATA CONSULTANCY SERVICES |
| TECH MAHINDRA |
+-----+
3 rows in set (0.00 sec)
```

17. Display a list of applicants with their names and a concatenated string of their city and state.

As there was no data for applicants location we have to alter the table

```
mysql> ALTER TABLE APPLICANTS
-> ADD CITY VARCHAR(100),
-> ADD STATE VARCHAR(100);
Query OK, 0 rows affected (0.00 sec)
Records: 0 Duplicates: 0 Warnings: 0

mysql> UPDATE APPLICANTS SET CITY = 'Mumbai', STATE = 'Maharashtra' WHERE APPLICANTID = 201;
Query OK, 1 row affected (0.01 sec)
Rows matched: 1 Changed: 1 Warnings: 0

mysql> UPDATE APPLICANTS SET CITY = 'Bangalore', STATE = 'Karnataka' WHERE APPLICANTID = 202;
Query OK, 1 row affected (0.01 sec)
Rows matched: 1 Changed: 1 Warnings: 0

mysql> UPDATE APPLICANTS SET CITY = 'Chennai', STATE = 'Tamil Nadu' WHERE APPLICANTID = 203;
Query OK, 1 row affected (0.01 sec)
Rows matched: 1 Changed: 1 Warnings: 0

mysql> UPDATE APPLICANTS SET CITY = 'Hyderabad', STATE = 'Telangana' WHERE APPLICANTID = 204;
Query OK, 1 row affected (0.01 sec)
Rows matched: 1 Changed: 1 Warnings: 0

mysql> UPDATE APPLICANTS SET CITY = 'Pune', STATE = 'Maharashtra' WHERE APPLICANTID = 205;
Query OK, 1 row affected (0.01 sec)
Rows matched: 1 Changed: 1 Warnings: 0

mysql> SELECT * FROM APPLICANTS;
+-----+-----+-----+-----+-----+-----+-----+-----+
| APPLICANTID | FIRSTNAME | LASTNAME | EMAIL | PHONE | RESUME | CITY | STATE |
+-----+-----+-----+-----+-----+-----+-----+-----+
| 201 | RAHUL | SHARMA | RAHUL.SHARMA@MAIL.COM | 9876543210 | EXPERIENCED JAVA DEVELOPER. | Mumbai | Maharashtra |
| 202 | PRIYA | KAPOOR | PRIYA.KAPOOR@MAIL.COM | 9123456780 | SKILLED DATA ANALYST WITH 3 YEARS EXPERIENCE. | Bangalore | Karnataka |
| 203 | VIKRAM | SINGH | VIKRAM.SINGH@MAIL.COM | 9988776655 | SYSTEM ADMIN WITH EXPERTISE IN LINUX SERVERS. | Chennai | Tamil Nadu |
| 204 | ANITA | MENON | ANITA.MENON@MAIL.COM | 9999999990 | HR PROFESSIONAL WITH 5 YEARS EXPERIENCE. | Hyderabad | Telangana |
| 205 | ARJUN | VERMA | ARJUN.VERMA@MAIL.COM | 9901234567 | UI/UX DEVELOPER WITH STRONG REACT SKILLS. | Pune | Maharashtra |
+-----+-----+-----+-----+-----+-----+-----+-----+
5 rows in set (0.00 sec)
```

ANS:

```
mysql> SELECT FIRSTNAME, LASTNAME, CONCAT(CITY, ', ', STATE) AS LOCATION FROM APPLICANTS;
+-----+-----+-----+
| FIRSTNAME | LASTNAME | LOCATION |
+-----+-----+-----+
| RAHUL | SHARMA | Mumbai, Maharashtra |
| PRIYA | KAPOOR | Bangalore, Karnataka |
| VIKRAM | SINGH | Chennai, Tamil Nadu |
| ANITA | MENON | Hyderabad, Telangana |
| ARJUN | VERMA | Pune, Maharashtra |
+-----+-----+-----+
5 rows in set (0.00 sec)
```

18. Retrieve a list of jobs with titles containing either 'Developer' or 'Engineer'.

```
mysql> SELECT JOBTITLE FROM JOBS WHERE JOBTITLE LIKE '%DEVELOPER%' OR JOBTITLE LIKE '%ENGINEER%';
+-----+
| JOBTITLE |
+-----+
| SOFTWARE ENGINEER |
| FRONTEND DEVELOPER |
+-----+
2 rows in set (0.00 sec)
```

19. Retrieve a list of applicants and the jobs they have applied for, including those who have not applied and jobs without applicants.

```
mysql> SELECT A.FIRSTNAME, A.LASTNAME, J.JOBTITLE FROM APPLICANTS A
-> LEFT JOIN APPLICATIONS AP ON A.APPLICANTID = AP.APPLICANTID
-> LEFT JOIN JOBS J ON AP.JOBID = J.JOBID;
+-----+-----+-----+
| FIRSTNAME | LASTNAME | JOBTITLE |
+-----+-----+-----+
| RAHUL | SHARMA | SOFTWARE ENGINEER |
| PRIYA | KAPOOR | DATA ANALYST |
| VIKRAM | SINGH | SYSTEM ADMINISTRATOR |
| ANITA | MENON | HR EXECUTIVE |
| ARJUN | VERMA | FRONTEND DEVELOPER |
+-----+-----+-----+
5 rows in set (0.01 sec)
```

20. List all combinations of applicants and companies where the company is in a specific city and the applicant has more than 2 years of experience.

For example: city=Chennai

```
mysql> ALTER TABLE APPLICANTS
-> ADD ExperienceYears INT;
Query OK, 0 rows affected (0.06 sec)
Records: 0 Duplicates: 0 Warnings: 0

mysql> UPDATE APPLICANTS SET ExperienceYears = 3 WHERE APPLICANTID = 201;
Query OK, 1 row affected (0.01 sec)
Rows matched: 1 Changed: 1 Warnings: 0

mysql> UPDATE APPLICANTS SET ExperienceYears = 5 WHERE APPLICANTID = 202;
Query OK, 1 row affected (0.01 sec)
Rows matched: 1 Changed: 1 Warnings: 0

mysql> UPDATE APPLICANTS SET ExperienceYears = 1 WHERE APPLICANTID = 203;
Query OK, 1 row affected (0.01 sec)
Rows matched: 1 Changed: 1 Warnings: 0

mysql> UPDATE APPLICANTS SET ExperienceYears = 4 WHERE APPLICANTID = 204;
Query OK, 1 row affected (0.01 sec)
Rows matched: 1 Changed: 1 Warnings: 0

mysql> UPDATE APPLICANTS SET ExperienceYears = 2 WHERE APPLICANTID = 205;
Query OK, 1 row affected (0.01 sec)
Rows matched: 1 Changed: 1 Warnings: 0

mysql> SELECT A.FIRSTNAME, A.LASTNAME, C.COMPANYNAME, C.LOCATION FROM APPLICANTS A
-> CROSS JOIN COMPANIES C WHERE C.LOCATION = 'Chennai' AND A.ExperienceYears > 2;
+-----+-----+-----+-----+
| FIRSTNAME | LASTNAME | COMPANYNAME | LOCATION |
+-----+-----+-----+-----+
| RAHUL     | SHARMA   | HCL TECHNOLOGIES | CHENNAI |
| PRIYA    | KAPOOR   | HCL TECHNOLOGIES | CHENNAI |
| ANITA     | MENON    | HCL TECHNOLOGIES | CHENNAI |
+-----+-----+-----+-----+
3 rows in set (0.00 sec)
```